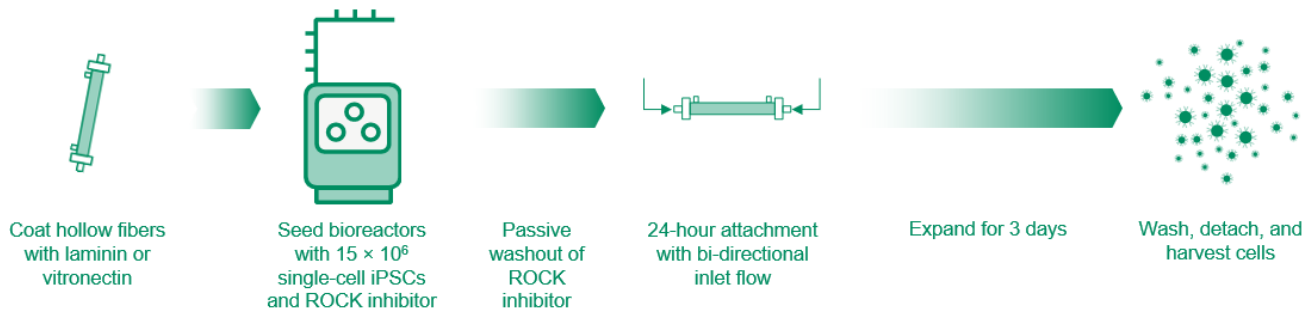


iPSC Expansion in the Quantum Flex Cell Expansion System Small Bioreactor

Induced pluripotent stem cells (iPSCs) are undifferentiated cells that can self-renew and produce specialized cell progeny. iPSCs have great potential in regenerative medicine, tissue engineering, and allogeneic cell therapies. Traditional culture methods are manual and limited by throughput, making it difficult to generate cell banks of starting material for differentiation. A 4-day expansion of a 15M seed of iPSCs (7,500/cm²) in the Quantum Flex small bioreactor produced 500M cells and 250M cells using laminin (LN) and vitronectin (VN) coats, respectively.



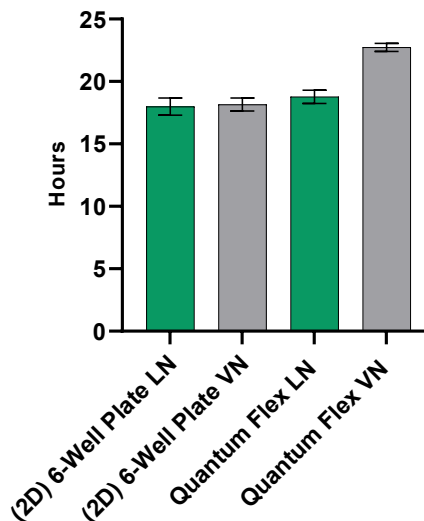
Automation with Quantum Flex is efficient and flexible:

- Expand many cells quickly: 15M iPSCs can become 250M to 500M in 4 days, depending on the process¹
- Hollow fibers within the bioreactor can be coated with either laminin or vitronectin¹
- 17-fold expansion in vitronectin-coated fibers and 34-fold expansion in laminin-coated¹
- Doubling times of 19 to 23 hours in laminin- and vitronectin-coated fibers, respectively¹
- Harvest viability > 95% with a harvest efficiency of > 98.4%¹

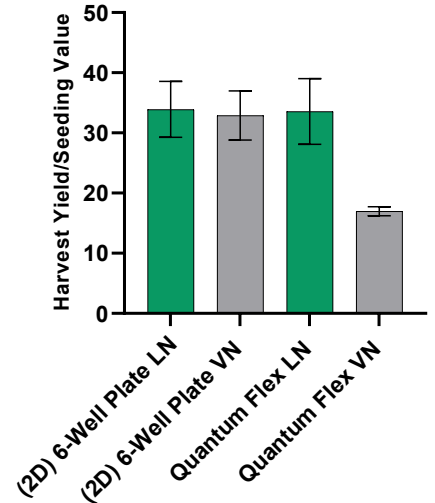
Pluripotency markers expressed at high rates on Quantum Flex-derived iPSCs:

- > 90% expression of OCT4, SOX2, SSEA4, and TRA-1-60, regardless of coating

Pop. Doubling Time



Fold Expansion

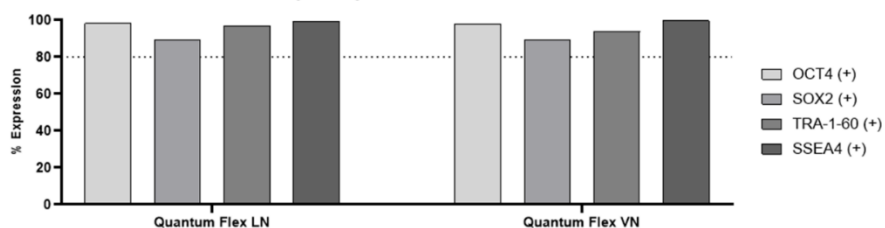


Vitronectin may require 1 additional culture day for equivalency to laminin

Watch the Full Webinar



iPSC Pluripotency Markers: Harvested iPSC



References:

1. Frank N, Tregidlo M. iPSC-ing into the future of cell therapy: expansion in a hollow-fiber bioreactor. Bioinsights webinar. 21 November 2023. Accessed 28 November 2023. <https://www.insights.bio/cell-and-gene-therapy-insights/webinars/505/iPSC-ing-into-the-future-of-cell-therapy-expansion-in-a-hollow-fiber-bioreactor>
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